

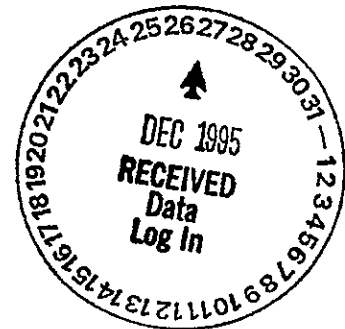
Lockheed Environmental Systems & Technologies Co.
Lockheed Analytical Services
975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

LOCKHEED MARTIN 

December 15, 1995

Ms. Joan Kessner
Bechtel Hanford, Inc.
P.O. Box 969
1022 Lee Boulevard
Richland, WA 99352

RE: Log-in No.:	L5913
Quotation No.:	Q400000-B
SAF:	B96-035
Document File No.:	1129596
BHI Document File No.:	299
SDG No.:	LK5913



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 29 November 1995.

The temperature of the cooler upon receipt was 4°C. Sample containers received agree with the chain-of-custody documentation. Sample containers were received intact. Samples designated for Hexavalent chromium analysis were not received in time to meet the analytical holding time requirements.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Kathleen Hall at (509) 375-4741.



Lockheed Analytical Services

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Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

" I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manger or a designee, as verified by the following signature."

Sincerely,


Kathleen M. Hall
Client Services Representative

cc: Client Services
Document Control

0004

**CASE NARRATIVE
INORGANIC NON METALS ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

- Two water samples were received for LK5913 and analyzed in batch 1129 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOGRN1	L5913-5	MS, DUP	7196 Chromium (VI)

Holding Time Requirements

- All samples were received outside of the method-specific holding time and are flagged with an "H".

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Kay McCann
Prepared By

December 4, 1995
Date

CASE NARRATIVE INORGANIC METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on November 29, 1995. The samples were logged in as L5913 and were prepared and analyzed in batch 1114 bh.

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Shellee McGrath
Prepared By

December 15, 1995
Date

Revised

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Dec 05 1995, 03:19 pm

Login Number: L5913
 Account: 596 Bechtel Hanford, Inc. * Richland, WA
 Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L5913-1 TEMP 4 "SAF # B96-035" Location: 156--018 Water 1 S SCREENING	BOGRN1	27-NOV-95	29-NOV-95	03-JAN-96
Hold:25-MAY-96				
L5913-2 TEMP 4 "SAF # B96-035" Location: 156--018 Water 1 S SCREENING	BOGRN2	27-NOV-95	29-NOV-95	03-JAN-96
Hold:25-MAY-96				
* L5913-3 TEMP 4 "SAF # B96-035" Location: 133 Water 1 S 200.7 CHROMIUM TOTAL	BOGRN1	27-NOV-95	29-NOV-95	03-JAN-96
Hold:25-MAY-96				
* L5913-4 TEMP 4 "SAF # B96-035" Location: 133 Water 1 S 200.7 CHROMIUM TOTAL	BOGRN2	27-NOV-95	29-NOV-95	03-JAN-96
Hold:25-MAY-96				
L5913-5 TEMP 4 "SAF # B96-035" Location: 133 Water 1 S 7196 CHROMIUM (VI)	BOGRN1	27-NOV-95	29-NOV-95	03-JAN-96
Hold:28-NOV-95				
L5913-6 TEMP 4 "SAF # B96-035" Location: 133 Water 1 S 7196 CHROMIUM (VI)	BOGRN2	27-NOV-95	29-NOV-95	03-JAN-96
Hold:28-NOV-95				
L5913-7 Location: Water 1 S EDD - DISK DEL. Water 1 S GERMANN Water 1 S INORG TYPE 2 RPT	REPORT TYPE	29-NOV-95	29-NOV-95	03-JAN-96

* Login product changed from 218.2 Chromium to 200.7 Chromium Total. Change necessary because of high chromium levels found in the samples. Client approval granted on 12/5/95. JMH 12/5/95

Signature: Gujauna Mitchell-Hall
 Date: 12/5/95

0010
 1129596

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Nov 29 1995, 12:21 pm

Login Number: L5913
Account: 596 Bechtel Hanford, Inc. * Richland, WA
Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L5913-1 TEMP 4 "SAF # B96-035" Location: 157 Water 1 S SCREENING	BOGRN1	27-NOV-95	29-NOV-95	03-JAN-96
		Hold:25-MAY-96		
L5913-2 TEMP 4 "SAF # B96-035" Location: 157 Water 1 S SCREENING	BOGRN2	27-NOV-95	29-NOV-95	03-JAN-96
		Hold:25-MAY-96		
L5913-3 TEMP 4 "SAF # B96-035" Location: 157 Water 1 S 218.2 CHROMIUM	BOGRN1	27-NOV-95	29-NOV-95	03-JAN-96
		Hold:25-MAY-96		
L5913-4 TEMP 4 "SAF # B96-035" Location: 157 Water 1 S 218.2 CHROMIUM	BOGRN2	27-NOV-95	29-NOV-95	03-JAN-96
		Hold:25-MAY-96		
L5913-5 TEMP 4 "SAF # B96-035" Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOGRN1	27-NOV-95	29-NOV-95	03-JAN-96
		Hold:28-NOV-95		
L5913-6 TEMP 4 "SAF # B96-035" Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOGRN2	27-NOV-95	29-NOV-95	03-JAN-96
		Hold:28-NOV-95		
L5913-7 Location: Water 1 S EDD - DISK DEL. Water 1 S GERMANN Water 1 S INORG TYPE 2 RPT	REPORT TYPE	29-NOV-95	29-NOV-95	03-JAN-96

Signature: Paul C. Jones

Date: 11-29-95

0011

1129596

Bechtel Hanford, Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						L5913		Page <u>1</u> of <u>1</u>	
Collector K. Trapp, <i>M. Mehlhorn</i>				Company Contact B. D. Blumenkranz				Telephone (509) 372-9658			
Project Designation 100-HR-3 Pump and Treatment				Sampling Location 100-HR-3 Pump and Treat				SAF No. B96-035			
Ice Chest No. <i>6WS-015</i>				Field Logbook No. NA				Method of Shipment Federal Express			
Shipped To Lockheed				Offsite Property No. <i>W96-0-0640-10</i>				Bill of Lading/Air Bill No. <i>8904647103</i>			
Possible Sample Hazards/Remarks				Preservation	HNO ₃	Cool 4°C	None				
				Type of Container	P/G	P/G	P				
				No. of Container(s)	1	1	1				
Special Handling and/or Storage Maintain samples between 2°C and 6°C				Volume	500mL	500mL	20mL				
SAMPLE ANALYSIS				Chrom-ium - Total	Chrom-ium VI	Activity Scan					
Sample No.	Matrix*	Date Sampled	Time Sampled								
BOGRN1	W	<i>11/27/95</i>	<i>1445</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>					
BOGRN2	W	<i>11/27/95</i>	<i>1455</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>					
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix*			
Relinquished By <i>M. Mehlhorn</i> Date/Time <i>11-28-95 0830</i> <i>Monty Mehlhorn</i> <i>11-28-95 0830</i> Relinquished By <i>Eric</i> Date/Time <i>0830</i> <i>Eric</i> <i>11-28-95</i> Relinquished By _____ Date/Time _____ Relinquished By _____ Date/Time _____				Sign/Print Names Received By <i>Eric</i> Date/Time <i>0900</i> <i>Eric</i> <i>11-28-95</i> Received By _____ Date/Time _____ Received By _____ Date/Time _____ Received By _____ Date/Time _____				S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue Wt = Wipe L = Liquid V = Vegetation X = Other			
LABORATORY SECTION		Received By <i>Monty Mehlhorn</i>		Title <i>Sample Custodian</i>		Date/Time <i>11-29-95 1615</i>					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

Environmental
Restoration
Contractor

ERC Team

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
CCN: N/A
OU: R00803
TID: N/A
ERAI: N/A
Subject Code: 5400

TO: Dave Blumenkranz H4-90

DATE: April 26, 1995

COPIES: Doug Bowers N3-05

FROM: Mike Wesselman
Radiological Controls
N3-06/376-2084

Post-it* Fax Note	7671	Date	5/1	# of pages	1
To	D. Bowers	From	D. Blumenkranz		
Co/Dept	ITH/Samp.	Co.	CHI/ELS		
Phone #	376-1007	Phone #	372-9658		
Fax #	376-5991	Fax #			

SUBJECT: EXEMPTION OF SAMPLES FROM 100-HR-3 PUMP AND TREAT FROM TOTAL ACTIVITY ANALYSIS.

After reviewing sampling data recorded on GeoDat as well as data from the latest resin change at the unit, it has been concluded that there is no need to perform total activity analysis of water sample from 100-HR-3 prior to offsite shipment. Water from all wells in the area is well below levels which would deliver 100 millirem per year CEDE to any one drinking two liters a day, no water exceeds the 2000 picocurie per gram limit for shipment as non radioactive by Department of Transportation. Activity trends in all wells have been downward for the last twenty years. Sample from the pump and treat system itself indicate less than six picocuries per gram of tritium and less than ten picocuries per liter of both alpha and beta contamination. All discharges of radioactive material to the ground in the 100-D Area have ceased, the actions of the pump and treat system do not appear to be mobilizing previously deposited materials. Based on the above information and the results of total activities performed to date, there is sufficient process knowledge to conclude that preshipment screening of water samples is no longer required.


Mike Wesselman

maw

Distribution

0013

112959

SAMPLE CHECK-IN LIST

Date/Time Received: 11-29-95 / 0915SDG#: 11167Work Order Number: 11167SAF #: B96-035Shipping Container ID: GWS015 Chain of Custody #: 11167

1. Custody Seals on shipping container intact? Yes ☒ No ☐
2. Custody Seals dated and signed? Yes ☒ No ☐
3. Sample temperature 4°C
4. Vermiculite/packing materials is Wet ☐ Dry ☒
5. Each sample is in a plastic bag? Yes ☒ No ☐
6. Sample holding times exceeded? Yes ☒ No ☐

7. Samples have:
- | | |
|----------------------------|---|
| <u> </u> tape | <u> </u> hazard labels |
| <u> X </u> custody seals | <u> </u> appropriate sample labels |

8. Samples are:
- | | |
|--------------------------------|--------------------------------|
| <u> X </u> in good condition | <u> </u> leaking |
| <u> </u> broken | <u> </u> have air bubbles |

9. Is the information on the COC and Sample bottles in agreement?

Yes ☒ No ☐

Notes: Chromium IV was passed helping time B06R01 (L5913-5)
B06R02 (L5913-6).

Sample Custodian/Laboratory: Paula Jones / LAS Date: 11-29-95
 PLO 11-29-95
 Telephoned To: Kathleen Hall On 11-29-95 By Paula Jones
 Faxed

LOCKHEED MARTIN

Sample Login Login Review Checklist

Lot Number LS913

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

SAMPLE SUMMARY REPORT

YES NO N/A Comment

- | | | | | |
|---|----------|----------|----------|-----------------------------|
| 1. Are all sample ID's correct? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |
| 2. Are all samples present? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |
| 3. Are all matrices indicated correctly? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |
| 4. Are all analyses on the COC logged in for the appropriate samples? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |
| 5. Are all analyses logged in for the correct container? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |
| 6. Are samples logged in according to LAS batching procedures? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |

LOGIN CHAIN OF CUSTODY

YES NO N/A Comment

- | | | | | |
|---|----------|----------|----------|-----------------------------|
| 1. Are the collect, receive, and due dates correct for every sample? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |
| 2. Have all appropriate comments been indicated in the comment section? | <u>X</u> | <u>—</u> | <u>—</u> | <u> </u> |

SAMPLE RECEIVING CHECKLIST

YES NO N/A Comment

- | | | | | |
|---|----------|----------|----------|-----------------------------|
| 1. Are all discrepancies between the COC and the login noted (if applicable)? | <u>—</u> | <u>—</u> | <u>X</u> | <u> </u> |
|---|----------|----------|----------|-----------------------------|

Paul Davis
primary review signature

11-25-95
date

Alm
secondary review signature

11-29-95
date

0015

1124596

Lockheed Analytical Services Sample Receiving Checklist

Page 1 of

Client Name: *Bethel-Houston*

Job No. *LS913*

Cooler ID: *not*

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: *40*

temperature of temp. blank upon receipt:

	Yes	No	* Comments/Discrepancies
custody seals intact	<i>X</i>		
chain of custody present	<i>X</i>		
blue ice (or equiv.) present/frozen	<i>X</i>		
rad survey completed	<i>X</i>		

SAMPLE CONDITION UPON RECEIPT

	Yes	No	* Comments/Discrepancies
all bottles labeled	<i>X</i>		
samples intact	<i>X</i>		
proper container used for sample type	<i>X</i>		
sample volume sufficient for analysis	<i>X</i>		
proper pres. indicated on the COC	<i>X</i>		
VOA's contain headspace		<i>OK</i>	
are samples bi-phasic (if so, indicate sample ID'S):		<i>OK</i>	

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times	<i>X</i>		<i>Chromium, BHA Sample were passed</i>
samples to subcontract			<i>OK Holding Times</i>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Frank Davis 11-29-95*

Sent to the client (date/initials):

** Client's signature upon receipt:

Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt

** = please review this information and return via facsimile to the appropriate CSR (702) 361-8146

112954

0016

version 2.0 (11/11/94)

Lockheed Analytical Laboratory
SAMPLE SUMMARY REPORT (su02)
Bechtel Hanford, Inc. * Richland, WA

Client	LAL	SDG		
Sample Number	Sample Number	Number	Matrix	Method
BOGRN1 _	L5913-1		Water	SCREENING -
	L5913-3		Water	218.2 CHROMIUM -
	L5913-5		Water	7196 CHROMIUM (VI
BOGRN2 _	L5913-2		Water	SCREENING -
	L5913-4		Water	218.2 CHROMIUM -
	L5913-6		Water	7196 CHROMIUM (VI
REPORT TYPE -	L5913-7		Water	EDD - DISK DEL. -
	L5913-7		Water	GERMANN -
	L5913-7		Water	INORG TYPE 2 RPT

0017

1124596

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRN1	Date Collected: 27-NOV-95
Matrix: Water	Date Received: 29-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, hexavalent	mg/L	7196	0.77	0.10	HD(1:5)	30-NOV-95	30765	L5913-5

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRN2	Date Collected: 27-NOV-95
Matrix: Water	Date Received: 29-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, hexavalent	mg/L	7196	0.61	0.10	HD(1:5)	30-NOV-95	30765	L5913-6

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRN1	Date Collected: 27-NOV-95
Matrix: Water	Date Received: 29-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	IDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, Total	mg/L	200.7	0.75	0.0010	0.010		1	14-DEC-95	31299	L5913-3

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOGRN2	Date Collected: 27-NOV-95
Matrix: Water	Date Received: 29-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	IDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, Total	mg/L	200.7	0.64	0.0010	0.010		1	14-DEC-95	31299	L5913-4